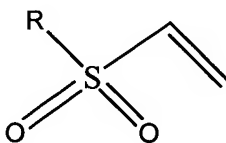


**In the Abstract:**

Please amend the abstract as follows:

**ABSTRACT OF THE DISCLOSURE**

A non-aqueous electrolyte comprising (I) a non-aqueous solvent, especially mainly composed of a cyclic carbonate and a cyclic ester, and optionally a linear carbonate, and (ii) an electrolyte salt, especially  $\text{LiBF}_4$ , dissolved therein and (iii) a vinyl sulfone derivative having the formula (I):



(I)

wherein R indicates is a  $\text{C}_1$  to  $\text{C}_{12}$  alkyl group, a  $\text{C}_2$  to  $\text{C}_{12}$  alkenyl group, or a  $\text{C}_3$  to  $\text{C}_6$  cycloalkyl group, and also a lithium secondary battery using the same are disclosed.